REEL #10
Gonyayev, G.S.

USSR

VIKULINA, L. F., et al, Radiotekhnika i Elektronika, Vol 16, No 1, Jan 71, pp 131-133

is a jump to the drift mode of operation. The lower amplitude of the oscillations in this mode is due to the reduction in current pulse duration. Frequency jumps do not take place when the specimens are connected in higher-Q oscillator sections, or when the elements of the section are adjusted with a change in voltage.

2/2

UNCLASSIFIED   PROCESSING DATE--200CT70
TITLE--SPLENOPORTOGRAPHY IN THE CLINICS OF THE MONGOLIAN PEOPLE'S REPUBLIC
-U-

AUTHOR-(02)-DOLGOR, P., GOOSH, B.

COUNTRY OF INFO--USSR

SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTEZIOLOGIYA, 1970, NR 3, PP
22-24

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LIVER DISEASE, SPLEEN, BLOOD CIRCULATION, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0913   STEP NO--UR/0481/70/000/003/0022/0024

CIRC ACCESSION NO--AP0126572
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0126572
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AUTHORS REPORT ON 120
  SPLENOPORTOGRAPHIES FROM THE SURGICAL DEPARTMENT OF THE FIRST CLINICAL
  HOSPITAL OF ULAN-BATOR, MONGOLIAN PEOPLE'S REPUBLIC. AUTHORS' MATERIAL
  AND LITERATURE DATA PERMITS DIAGNOSIS OF PORTAL HYPERTENSION. 39 CASES
  OF SPLENOPORTOGRAPHY ENABLES TOPICAL DIAGNOSIS OF ECHINOCOCCAL LIVER
  CYSTS. SPLENOPORTOGRAPHY UNDER INTRAVENOUS ANAESTHESIA WITH MUSCLE
  RELAXANTS IMPROVES THE QUALITY OF SPLENOPORTOGRAMMES.   FAICLITY:
  ULAN BATORSKIY MEDITSINSKIY INSTITUT.

UNCLASSIFIED

Aluminum and Its Alloys

USSR   UDC 669.712: 541.183

PASHKEVICH, L. A., GOPIYENKO, G. N., and ZAVARITSKAYA, T. A.

"Effect of the Proportioning of Mineralization Agent on the Transformation of Aluminum Oxide Into α-Modification"

Moscow, Tsvetnyye Metally, No 2, Feb 71, pp 37-39

Translation: Aluminum fluoride in the quantity of 2-10% with vapors of aluminum hydroxide produces hydroxofluoride which is detected on the differential curves by heat effects of formation (570-585°C) and decomposition (1200-1300°C). Increase in the quantity of mineralization agents leads to a decrease of the temperature of α-Al_2O_3 formation. However, boric acid, unlike AlF_3, produces moderate reduction of the temperature of phase transformation of Al_2O_3 into α-Al_2O_3.

1/1   7

TITLE--EXTENT OF DISPENSARY SERVICE FOR URBAN ADOLESCENTS -U-

AUTHOR--GOPIYENKO, N.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, SOVETSKOYE ZDRAVOOKHRANENIVE, RUSSIAN, NO 3, 1970, PAGES
   37039
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEDIATRICS, MEDICAL FACILITY, MEDICAL EXAMINATION, SURGERY,
   OTOLARYNGOLOGY, OPHTHALMOLOGY, DENTISTRY, NEUROLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0711   STEP NO--UR/0753/70/000/003/0037/0039

CIRC ACCESSION NO--AP0132815
                     UNCLASSIFIED

CIRC ACCESSION NO--AP0132815
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RATIONAL PLANNING OF OUT PATIENT
POLYCLINIC SERVICE TO ADOLESCENTS IS IMPOSSIBLE WITHOUT A PRECISE
KNOWLEDGE OF THE EXTENT OF THEIR DISPENSARY SERVICE, SINCE THE LATTER IS
THE FOREMOST METHOD OF MEDICAL SERVICE TO THIS POPULATION GROUP.
DISPENSARY SERVICE COVERS BOTH HEALTHY ADOLESCENTS, AND ALSO ADOLESCENTS
SUFFERING FROM CHRONIC ILLNESSES.   DISPENSARY SERVICE TO HEALTHY YOUNG
BOYS AND GIRLS BETWEEN 15 AND 18 YEARS OF AGE BEGINS WITH ANNUAL SPRING
MEDICAL EXAMINATIONS OF WORKING ADOLESCENTS, THE STUDENTS OF VOCATIONAL
AND TECHNICAL SCHOOLS, TEKHNIKUMS AND ACADEMIC SCHOOLS BY COMMISSIONS
CONSISTING OF PHYSICIANS IN SIX SPECIALIZATIONS: THERAPEUTICS,
SURGERY, OTORHINOLARYNGOLOGY, OPHTHALMOLOGY, NEUROPATHOLOGY, AND
DENTISTRY.   ADOLESCENTS AFFLICTED WITH CHRONIC ILLNESSES (RHEUMATISM,
ILLNESSES OF THE CARDIOVASCULAR SYSTEM, ETC.) AND THOSE WHO ARE RETARTED
IN THEIR PHYSICAL DEVELOPMENT ARE REVEALED IN THE COURSE OF THE
EXAMINATION.   ALL OF THESE AND ALSO YOUNG PEOPLE WHO HAVE HAD INFECTIOUS
DISEASES, THOSE WHO HAVE BEEN ILL FREQUENTLY AND FOR PROLONGED PERIODS,
AND THOSE WHO SUFFER FROM CHRONIC ILLNESSES, REVEALED BY INFORMATION
FROM THERAPEUTIC AND PREVENTIVE MEDICAL ESTABLISHMENTS, ARE UNDER
DISPENSARY OBSERVATION OF PHYSICIANS OF THE VARIOUS SPECIALIZATIONS.
  FACILITY: ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF SOCIAL HYGIENE
AND PUBLIC HEALTH ORGANIZATION IMENI N. A. SEMASHKO.

UNCLASSIFIED

USSR   UDC 669.295.472

GOPIYENKO, V. G., PAVLOVA, L. A., BAYMAKOV, Yu. V., ZHAYLO, V. A.

"Influence of Current Density and Temperature on Anode Dissolution of Metallic Titanium in Melts"

Tr. Vses. N.-i. i Proekt. In-ta Alyumin., Magn. i Elektrod. Prom-sti [Works of All-Union Scientific Research and Planning Institute for the Aluminum, Magnesium and Electrode Industry], No 79, 1971, pp 127-136, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G262 by G. Svodtseva).

Translation: Studies performed over a broad range of temperatures (150-750°) and electrolyte compositions (NaCl-KCl, NaCl-MgCl$_2$, NaCl-AlCl$_3$) have shown that in all cases, the anode yield per current decreases with increasing current density and decreasing temperature. The main factor determining the quantitative aspect of anodic dissolution of Ti is the change in the type of electrode reaction. Certain reasons for the deviation of anode yields per current from the theoretical quantities are suggested. 6 Figures; 7 Biblio. Refs.

1/1

USSR

UDC 666.764-669.295

GOPIYENKO, V. G., All Union Aluminum and Magnesium Institute

"Contact Interaction of Metallic Titanium and Oxides of Refractory Materials"

Moscow, Ogneupory, No 6, 1971, pp 55-58

Abstract: It has been noted that coatings of titanium appear on oxides of re-
fractory materials when the latter are in contact with metallic titanium in
the 600-900°C interval. Also observed is the growth of polyhedral   -Ti
crystals oriented principally in the plane of the substrate. The presence of
metallic titanium was detected in x-ray analysis. This article gives results
of thermodynamic computations of the possible reactions and an investigation
of transverse cuts of the titanium coatings. This latter investigation showed
that at 500-900°C, there is, in most cases of Ti coatings on aluminum oxide,
practically no noticeable evidence of a transition layer between the metal
and the ceramic. However, a marked transitional layer was found between Ti
coatins and magnesium spinels. It was also found that the formation of the
coatings at high temperatures is stimulated or accompanied by chemical interac-
tion of the metal of the coating and the substrate material.

1/1

USSR

UDC 669.295.472

GOPIYENKO, V. G., ANUFRIYEVA, N. I.

"Studies on the Development of a Technology for Electrolytic Refining of Titanium in Fused Media"

Translation: The basic results of investigations performed at the All-Union Aluminum and Magnesium Institute in 1955-1968 for the development of a technology for electrolytic refining of Ti in fused media are presented. A technology of refining the wastes of unalloyed Ti producing large crystalline and powdered Ti of high purity has been developed and tested on pilot scale. The technology of refining of alloy wastes produces crystalline alloy Ti. 2 tables.

1/1

USSR   UDC 535.8:535.24 1.13

GOPP, E. Ye., KUDINOV, V. P.

"A Luminous-Flux Modulator of the Tuning-Fork Type for a Star Follower"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 8, August 1970, pp 50-53

Abstract: A description is given of a simple luminous-flux modulator of the tuning-fork type, which provides a stable characteristic curve for a star follower with a large visual field and high sensitivity; the slope of the characteristic curve does not depend upon the brightness of the star, nor upon the diameter of its image, nor upon the dimensions of the visual field. The influence of an irregular background of light is decreased by a factor of several dozen. The procedure is given for determining the geometry of a modulator that will permit the required star-follower characteristic to be obtained. With such a modulator it is possible to obtain from the star-follower sensor unit a resolution measurable in tenths or even hundreds of an angular second with a linear zone of several seconds and a visual field of several dozen angular minutes. 2 figures, 1 bibliographic entry.

1/1

USSR   UDC: 51:621.391

GOPPA, V. D.

"(L,g)-Codes"

V sb. 4-y Simpozium po probl. izbytochn. v inform. sistemakh. Dokl. Ch. 1
(Fourth Symposium on Problems of Redundancy in Information Systems. Reports.
Part 1), Leningrad, 1970, pp 130-135 (from RZh-Kibernetika, No 1, Jan 71,
Abstract No 1V406)

Translation: Let S be a vector space of dimensionality n over $GF(q)$, and let
L be some set of different elements $GF(q^m)$ (where m is a natural number):
$L = (\alpha_1, \alpha_2, \cdots \alpha_n)$. Corresponding to each vector $x \in S$, $x = (a_1, a_2, \cdots, a_n)$, $a_i \in GF(q)$ is

an element $\sum_{i=1}^{n} \frac{a_i}{z - \alpha_i}$ from the space R of rational functions over $GF(q^m)$. This

mapping is the isomorphism of S in R. The isomorphism $S \sim \overline{S}$ ($\overline{S}$ is the image
of S) permits treating linear codes of weight d as linear subspaces of $\overline{S}$
made up of rational functions of at least degree d. An (L,g)-code is defined
as the set of elements $f \in \overline{S}$ such that $f \equiv 0 \pmod{g(z)}$, where the set $g(z)$ with
coefficients from $GF(q^m)$ does not have roots in L. The parameters of (L,g)-
codes: $n < q^m$, $k \geq n - (2t-1)m - 1$, $d > 2t+1$ (n is the length of a code word, k
is the number of information symbols, d is the code spacing). An algorithm

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GOPPA, V. D., 4-y Simpozium po probl. izbytochn. v inform. sistemakh. Dokl. Ch. 1, Leningrad, 1970, pp 130-135

for decoding these codes is given which is no more complicated than Berlecamp's iterative algorithm for alphanumeric character codes. The following special cases of (L,g)-codes are considered: 1. Cumulative codes -- codes whose generating polynomial $g(z) = (z - \alpha)^r$ $(\alpha \in GF(q^m)$. r is a natural number). Alphanumeric character codes are a special case of these codes. 2. Separable codes -- codes whose generating polynomial is separable. The overall evaluation of parameters of (L,g)-codes has been improved for separable codes. Namely: $n < 2^m$, $k < n - ml$, $d \geqslant 2l + 1$. Shrivastava code is a special case of these codes.

Codes with the following parameters are constructed on the basis of (L,g)-codes: $n = q^m - 2l + (2l - 1)m + 1$, $k = q^m - 2l$, $d \geqslant 2l + 1$. In many instances the parameters of these codes are better than for alphanumeric character codes. G. Tenegol'ts.

USSR

UDC: 51

BRANOVITSKAYA, S. V., GORACHEV, V. A., LOPATIN, A. P., POLOV-
NIKOV, V. S.

"Analysis of Technological Algorithms"

V sb. Mat. metody issled. i optimiz. sistem (Mathematical
Methods of Studying and Optimizing Systems--collection of
works), Kiev, 1971, pp 71-93 (from RZh-Kibernetika, No 8,
Aug 72, Abstract No 8V584)

[No abstract]

1/1

- 47 -

"Transesterification and Reaction With Hydrogen Chloride of O,O'-Dialkyl Diselenophosphates"

Abstract: This study is a continuation on the authors' earlier (1969) work on the reaction between 0,0'-dialkyl diselenophosphonic acids and the higher alcohols, which produces those same acids with various different radicals. Potassium O,O'-dialkyl selenophosphates with mixed radicals were obtained, thus demonstrating the possibility of transesterification in those phosphates. The anhydrides of several O,O'-dialkyl selenodiphosphonate esters, and also some bis(0,0'-dialkyldiselenophosphates) were obtained instead of the expected corresponding acids. Physical properties of these phosphates and acid anhydrides are given, along with laboratory procedures.

1/1

GORAK, R. D., ZEMLYANSKIY, N. I., MURAV'YEV, I. V.

"Interaction of Phosphorus Pentaselenide with Alcohols in the Presence of Tri-
ethylamine"

Abstract:Experimental results are presented showing that phosphorus pentaselen-
ide reacts with alcohols in the presence of triethylamine in the ratio 1:4:2
with the formation of 0,0-dialkyldiselenophosphates. A mixture of 0-alkyltri-
selenophosphates and 0,0'-dialkyldiselenophosphates is formed in the molar
ratio of 1:3:3. By alylation of potassium 0-alkyltriselenophosphates, the
middle esters of 0-alkyl-Se,Se'-dialkyltriselenophosphoric acid were obtained.
The experimental procedure for obtaining the mentioned compounds and the yields
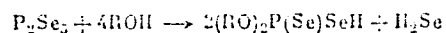are described.

1/1

USSR   UDC 547.26'119

ZEMYLANSKIY, N. I., and GORAK, R. D., L'vov State University imeni I. Franko

"Diselenophosphoric Acids and Their Salts"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, pp 1691-1693

Abstract: The reaction of phosphorus pentaselenide with alcohols proceeds mainly according to the Pichchimuka scheme suggested for phosphorus pentasulfide

$$P_2Se_5 + 4ROH \longrightarrow 2(RO)_2P(Se)SeH + H_2Se$$

In the case of $R=C_6H_5$ it is possible to isolate free 0,0-diphenyldiselenophosphoric acid, which is stable in air. No free acid can be isolated in the case of $R=CH_3$, C_2H_5, n-iso-C_3H_7, n-C_4H_9. In all cases the authors isolated potassium salts from the reaction mixture by neutralization of the acid with potassium ethoxide. The exchange reaction of potassium salts of 0,0-dialkyl-(phenyl)diselenophosphoric acids with nickel and cobaltous chloride gives stable nickel and cobalt salts of 0,0-dialkyl(phenyl)diselenophosphoric acids. Ferrous, cupric and manganous salts when treated with potassium salts of 0,0-dialkyl(phenyl)diselenophosphoric acid form selenites instead of the expected diselenophosphites.
1/1

USSR   UDC 547.26'118

GORAK, R. D., and ZEMLYANSKIY, N. I., L'vov State University imeni Ivan
Franko

"Iodination and Chlorination of O,O-Dialkyl(phenyl) Diselenophosphates"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 1994-1995

Abstract: A study is described of the reaction of O,O-dialkyl(phenyl)
diselenophosphates with chlorine and iodine. At stoichiometric ratios,
the principal reaction products are bis[O,O-dialkyl(phenyl) diseleno-
phosphates]; with excess chlorine, the reaction products are O,O-dialkyl
phosphochloridoselenates. Unlike for O,O-dialkyl dithiophosphates, the
presence of water in the reaction mixture reduces the yield of bis(O,O-
dialkyl(phenyl) diselenophosphates. The over-all procedure of synthesizing
O,O-dialkylphosphorochloridoselenates is described, citing the yield as
72-82%. A table in the original article characterizes the new compounds.

1/1

1/2   025   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--PREPN. OF BISMUTH TELLURDIE IODIDE, AND SOME OF ITS OPTICAL
   PROPERTIES --U-
AUTHOR-(05)-CHEPUR, D.V., GORAK, YA.A., KOVACH, D.SH., TURYANITSA, I.D.,
   BORETS, A.N.
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG, MATER. 1970, 6(2), 385-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--BISMUTH, TELLURIDE, IODIDE, OPTIC PROPERTY, CHEMICAL PURITY,
   CHEMICAL SYNTHESIS, SINGLE CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/1345   STEP NO--UR/0363/70/006/002/0385/0386

CIRC ACCESSION NO--AP0121838
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0121838

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BITEI SINGLE CRYSTALS WERE PREPD.
AND THE CHARACTERISTIC ABSORPTION IN THE EDGE REGION WAS STUDIED. HIGH
PURITY STARTING MATERIALS WERE USED FOR THE SYNTHESIS. BITEI WAS
SYNTHESIZED FROM THE ELEMENTS TAKEN IN THE STOICHIOMETRIC RATIO AT
480DEGREES. THE SYNTHESIS IN EVACUATED QUARTZ AMPULS TOOK SEVERAL DAYS.
THE SINGLE CRYSTALS WERE IN THE FORM OF EASILY CLEAVING PLATELETS. X
RAY ANAL. CONFIRMED THAT THEY BELONG TO HEXAGONAL SYSTEM WITH A EQUALS
4.29 ANGSTROM: C EQUALS 6.75 ANGSTROM. PRELIMINARY STUDY OF THE
ABSORPTION OF NONPOLARIZED IR SHOWED THAT CRYSTALS SIMILAR TO 10 MU
THICK TRANSMIT SMALLER THAN OR EQUAL TO 10PERCENT. BECAUSE ABSORPTION
INCREASES TOWARDS THE LONGER WAVELENGTHS, IT MAY BE CAUSED BY HIGH
CONCN. OF FREE CARRIERS. THE DEPENDENCE OF THE ABSORPTION COEFF. ON THE
SQUARE OF THE WAVELENGTH SEEMS TO CONFIRM THIS SUGGESTION. THE OBSD.
ABSORPTION EDGE COULD BE CAUSED BY SIMPLE ALLOWABLE TRANSITIONS BETWEEN
THE BANDS.   FACILITY: UZHGOROD. GOS. UNIV., UZHGOROD, USSR.

UNCLASSIFIED

USSR

UDC 681.327

GORANSKIY, B. P., ZVEZDIN, A. K.

"A Memory Element"

USSR Author's Certificate No. 267119, Filed 12/03/69, Published 20/07/70 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No. 4, 1971, Abstract No. 4B54SP from the resume).

Translation: Memory elements (ME) for a magnetooptical memory unit consisting of a transparent substrate with an applied transparent film made of a ferromagnetic material with a compensation temperature (T_c) are well known. In order for the magtooptic memory with these elements to operate, it is necessary that their T_c be similar to each other (permissible fluctuation from element to element <0.5°). This places rigid requirements on the technology of manufacture of the magnetic film of the memory elements, since slight changes in the composition of the material and the presence of defects and heterogeneities lead to changes in T_c. When such a memory unit operates, the temperature of the substrate must be maintained at T_c with an accuracy of <0.5°, which is difficult to do. In order to decrease the requirements for thermostating accuracy and identity of threshold temperature T_c in all elements of the memory unit, it is suggested that the ME film be made of a ferromagnetic material in which the direction of the easy axis of magnetization changes as a function of temperature. 2 figs.

1/!

AN0017115

GORANSKIY G. K.

UR 9016

TITLE--   "IFAK" IS OPERATIONAL

NEWSPAPER-- SOVETSKAYA BELORUSSIA, JANUARY 30, 1970, P 2, COL 1

ABSTRACT--   SEVENTY RESEARCH INSTITUTIONS AND INDUSTRIAL PLANTS WHICH
WORK IN THE AREAS OF THE DEVELOPMENT AND APPLICATION OF COMPUTERS,
AUTOMATED CONTROL SYSTEMS, AND AUTOMATED ENGINEERING PREPARATORY WORK
IN MACHINE DESIGN HAVE MERGED TO FORM THE BELORUSSIAN TERRITORIAL
GROUP OF THE INTERNATIONAL FEDERATION OF AUTOMATIC CONTROL /IFAC/.
THE CHAIRMAN OF THE GROUP IS G. K. GORANSKIY, CORRESPONDING MEMBER OF
THE BELORUSSIAN ACADEMY OF SCIENCES, DIRECTOR OF THE INSTITUTE OF
ENGINEERING CYBERNETICS.

30

19600322

AN0017115

ACCORDING TO GORANSKIY, THE BELORUSSIAN GROUP CONSISTS OF CERTAIN
INSTITUTES OF THE ACADEMY, INDUSTRIAL INSTITUTES, BELORUSSIAN STATE
UNIVERSITY, A POLYTECHNIC INSTITUTE, PLANT IMENI ORDZHONIKIDZE. THE
ACTIVITIES OF THE GROUP ARE DIRECTED BY THE INSTITUTE OF ENGINEERING
CYBERNETICS, WHICH IS THE LEADING RESEARCH INSTITUTE IN THE SOVIET
UNION IN THE AREA OF AUTOMATION OF ENGINEERING PREPARATORY WORK IN
MACHINE DESIGN.

AS PART OF ITS INTERNATIONAL PROGRAM, DATA ON THE PROGRAMMED CALCU-
LATIONS OF CUTTING CONDITIONS, DEVELOPED AT THE INSTITUTE OF ENGI-
NEERING CYBERNETICS, HAVE BEEN MADE AVAILABLE TO THE REGIONAL COMPU-
TATION CENTER IN RUSSA, BULGARIA.

mK

19600323

Analysis and Testing

USSR   UDC 620.179.14

GORAZDOVSKIY, T. YA., and TATARNIKOV, V. M.

"Inductive Measuring of Rheologic Voltage in Nonferromagnetic Metals"

Sverdlovsk, Defektoskopiya, No 5, Oct 73, pp 30-33

Abstract: An experimental study is made of the possible exposure and measure-
ment of the anisotropy of rheologic voltage using the method of eddy currents.
The developed method and the apparatus can be utilized for measuring voltage
in nonferromagnetic metals and for contactless measuring of anisotropy of
electrical conductivity as well as for the investigation of the kinetics of
development of processes during longitudinal and latitudinal deformation
and for the establishment of the function of the Poisson ratio. The use of a
superimposed inductive eddy-current linear detecting element is proposed
which produces a linearly localized electromagnetic field in the surface
layer of the studied material. Two illustrations.

1/1

TITLE--CONTRACTILE FUNCTION OF THE MYOCARDIUM ACCORDING TO THE DATA OF
  POLYCARDIOGRAPHY IN PATIENTS WITH AURICULAR FIBRILLATION PRIOR TO AND

AUTHOR--GORB, G.D.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 4, PP 69-71

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MYOCARDIUM, HEART DISEASE, HEART STIMULATOR, ELECTRIC
  DISCHARGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0560   STEP NO--UR/0504/70/042/004/0069/0071

CIRC ACCESSION NO--AP0108775
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0108775
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHASE ANALYSIS OF THE LEFT
VENTRICLE SYSTOLE IN 239 PATIENTS WITH TACHYSYSTOLIC FORM OF AURICULAR
FIBRILLATION (DUE TO ATHEROSCLEROSIS, RHEUMATISM) SHOWED THE
PROLONGATION OF THE PERIOD OF CONTRACTION AND SHORTENING OF EJECTION,
REDUCTION OF BLUMBERGER'S MECHANICAL COEFFICIENT AND THE INTRASYSTOLIC
INDEX OF THE PERIOD OF EJECTION. FOLLOWING ELECTRIC PULSE THERAPY IN
224 OUT OF 239 PATIENTS (93.8PERCENT) THE SINUS RYTHM RESTORED, A
POSITIVE DYNAMICS OF THE CARDIAC SYSTOLE PHASES WAS NOTED: SHORTENING
OF THE PERIOD OF CONTRACTION, PROLOGNATION OF THE PERIOD OF EJECTION,
INCREASE OF BLEMBERGER'S COEFFICIENT AND THE INTRASYSTOLIC INDEX OF THE
PERIOD OF EJECTION WHICH ALONGSIDE QUICK DECREASE OR DISAPPEARANCE OF
CLINICAL SYMPTOMS INDICATING CIRCULATORY INSUFFICIENCY (CONGESTIVE
MANIFESTATIONS AND EDEMA) TESTIFIED TO THE IMPROVEMENT OF THE
CONREACTILE FUNCTION OF THE MYOCARDIUM.   FACILITY: MEDSANCHAST'
NOVOKRAMATORSKOGO MASHINOSTRUITEL'NOGO ZAVODA IM. V. I. LENIN.

UNCLASSIFIED

GORB, M. L.

108

fractional exponent equal to -1/2, an integral kernel representation is derived, and time dependencies of the real and imaginary parts are computed and plotted. A graphical analysis shows that the representation of an elastic modulus by a complex Q* operator assures an energy decrease with tension relaxation in agreement with the second law of thermodynamics.

Karplnos, D. M., L. I. Tuchinskiy, M. L. Gorb, E. S. Umanskiy, and V. Ya. Fefer. Mechanical properties of titanium reinforced by unidirectional molybdenum wires. Problemy prochnosti, no. 6, 1972, 28-32.

The mechanical properties of type VT 1-0 titanium, reinforced with unidirectional wires of molybdenum M4, were investigated. Reinforcement wires 0.8 mm in diameter were wound unidirectionally on titanium matrix plates 0.08 mm thick. The wire volumetric content was regulated by the winding pitch, and comprised 10, 20, 32, and 44% by volume. Tensile strength and impact viscosity tests were conducted. Non-reinforced titanium plates were tested for comparison. The tensile strength was tested at 20, 400, 600, and 800° C; five specimens for each volumetric content of the reinforcement wire were tested at each temperature. At all investigated temperatures, a practically linear relationship was observed between the short-term tensile strength and the volumetric wire content V_w. An increase of titanium strength due to reinforcement is characterized by the strengthening coefficient K, which represents the ratio of the composition strength to the titanium strength at a specific temperature.

USSR   UDC 539.4

KARPINOS, D. M., TUCHINSKIY, L. I., GORB, M. L., UMANSKIY, E. S., FEFER,
V. Ya., Kiev

"Mechanical Properties of Titanium Reinforced with Unidirectional Molybdenum
Wires"

Abstract: This work presents a study of the mechanical properties of rein-
forced titanium-based materials. Compositions based on type VT-1-0 alloy
reinforced with unidirectional M4 molybdenum wires were studied. The speci-
mens were made by vacuum dynamic hot pressing. The volumetric content of
wire was adjusted by the winding step and amounted to 10, 20, 32 and 44 vol.%.
Each specimen consisted of 20 to 30 plates with wound wires. The dependence
of tensile strength, yield point, $\sigma_{0.2}$, Young modulus and impact toughness
on molybdenum content was studied. It was found that the tensile strength
and modulus of elasticity of compositions increased linearly with increasing
volumetric content of wire, which agrees with the additive rule. It is
demonstrated that as temperature rises, the strengthening factor of the com-
positions increases significantly. Impact toughness was found to be depen-
dent on composition and orientation of reinforcing elements.

1/1

USSR

UDC 620.173.251.1

GORB, M. L., MAREK, B. A., TEODOROVICH, O. K., Kiev

"Compressive Strength of Reinforced Copper-Tungsten Fiber Material"

Problemy Prochnosti, No 11, 1971, pp 95-97.

ABSTRACT: Results are presented from comparative compressing testing of material based on copper, reinforced with high-strength tungsten fibers, and metal ceramic materials with the same volumetric content of components. It is demonstrated that the compressive strength of the reinforced material at room temperature is double the strength of the metal ceramic material. The mechanism of rupture of the reinforced material is described schematically.

1/1

- 7 -

USSR

UDC 620.17

GORB, M. L., OSTROVSKIY, A. A. (Kiev), Institute of the Problems of Material Science, Academy of Sciences, Ukrainian SSR

"A Chamber and Mechanical Tensometers for Testing Tubular Specimens at Low Temperatures"

Kiev, Problemy Prochnosti, No 10, 1970, pp 101-105

Abstract: A design is proposed for a low-temperature attachment to installations for testing tubular specimens for the combined action of an axial load and internal pressure. A description is given of the design of mechanical tensometers intended for the measurement of longitudinal and transverse deformations of tubular samples deformed in a low-temperature chamber. 3 figures, 3 bibliographic entries.

1/1

- 93 -

USSR   UDC 621.316.722.1(088.8)

GORBACH, A.V.

"Stabilizer For Input Voltage Of Converter"

USSR Author's Certificate No 264484, filed 26 Dec 68, published 19 June 70 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1B468P)

Translation: A circuit is proposed for a stabilizer with pulse regulation, intended for the supply of a converter of d-c voltage into square a-c, in which the frequency of commutation of the regulator transistor is determined by the master differential pulses from the output of the converter. In order to assure sharp blocking and unblocking of the regulator transistor, a decrease of the dynamic instability, and an increase of reliability, there is connected to the base of the regulator transistor (across the parallel circuit of a stabilitron and capacitor) the collector of a control transistor, the base of which is connected across the resistance by a d-c amplifier and across a parallel circuit of a capacitor and semiconductor diode -- with a differential ladder network, across which pulses are fed to the stabilizer from the converter. 1 ill. S.D.

1/1

- 34 -

USSR   UDC 620.17

GORBACH, S. S., MARKOVSKIY, V. YU., PAKHNEV, A. V., and SHAKOL'SKAYA, M. P.

"Influence of Various Factors Upon Photoelastic Coefficients During the
Measurement of Stresses in Cubic Single-Crystals by the Polarization-Optical
Method"

Tallin, VII Vses. Kong. po Polayarizatsionno-Optich. Metodu Issled. Napryazheniy.
4 -- Sbornik (Seventh All-Union Conference on the Polarization-Optical Method
of Stress Research. 4 -- Collection of Works), 1971, pp 141-144 (from Referativnny
Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2V1628 by V. D. Kopytov)

Translation: A report is given on the results of an experimental investiga-
tion of the influence of the temperature, wavelength, and impurities upon
the value of the photoelastic coefficients of alkaline-halide crystals of
NaCl, KCl, KBr, KY and RbY. It turned out that the photoelastic coefficients
increase with an increase of temperature. Only for NaCl crystals was such an
effect not observed. Increasing the wavelength also first brings about an
increase of the optical coefficient, and then, starting with certain wave-
length values (on the order of 577 nanometers) it begins to decrease. Here
the wavelength interval at which a sharp decrease of the optical coefficients
begins, is shifted toward high temperature. Increasing the percent content of
1/2

USSR   UDC 669.15'24'295

GORBACH, V. G., KOKORIN, V. V., SAMSONOV, YU. I., and CHUISTOV, F. V.

"Precipitation by Stacking Faults in an Fe-Ni-Ti Alloy"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 2, Mar-Apr 72, pp 147-150

Abstract: An Fe-Ni-Ti alloy was selected to investigate stacking fault precipitation. This alloy had the following chemical composition (in wt %): 29.7 Ni, 3.82 Ti, 0.018 C, balance-Fe. The alloy was prepared in an induction furnace, homogenized at 1150°C for eight hours, and then forged (at 1150°C) to an 11 x 11-mm cross section. The produced rods were cut into samples approximately 1 mm and heat treated at different temperatures or in a vacuum or in salt baths and then quenched in water after heating at 1150°C for two hours.
     Test results showed that in the aged austenite of the $Fe+30$ Ni$+4$ Ti alloy there are helicoidal dislocations and stacking faults of a vacancy nature. Diffraction contrast analysis revealed that the stacking faults were of the subtraction type. Also a new mechanism of precipitation (heterogeneous precipitation by stacking faults) was detected for the Fe-Ni-Ti alloy and it was assumed that the equilibrium n-phase (Ni_3Ti) is the precipitation phase in the given case. Three figures, 16 bibliographic references.

1/1

USSR   UDC   621.59

VERGOLA, V. Ye., GORBACH, V. P., PARIYSKIY, V. B., SHAPOVLOV, I. A.

"Machine for Investigation of Deformations at Temperatures Down to 1.5°K"

Moscow, Pribory i Tekhnika Eksperimenta, pp 252-254

Abstract: A low temperature machine is described for studies of deformation at temperatures down to 1.5°K, allowing up to nine specimens to be compression tested at the same time. The machine is designed for forces up to 200 kg, provides for 18 rates of deformation between 12 and 9 · 10^{-5} mm/min and a maximum sensitivity of 25 g/1 mm of the strip chart recorder scale. Diagrams are recorded automatically in load-time coordinates.

1/1

1/2   016   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--GRADIENT ELASTIC TENSOR FOR A CUBIC CRYSTAL IN A MODEL OF
   SPHERICALLY SYMMETRIC RIGID IONS -U-
AUTHOR-(02)-GORBACHENKO, B.I., TOLPYGO, K.B.

COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(1), 166-7

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--TENSOR, NUCLEUS, CUBIC CRYSTAL, MODEL, ION

CONTROL MARKING--NO RESTRICTIONS'

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0561   STEP NO--UR/0185/70/015/001/0166/0167

CIRC ACCESSION NO--AP0121233
                          UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0121233
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   THE COMPONENTS OF THE S TENSOR ON
NUCLEUS A WERE EXAMD. FOR THE CASE INVOLVING THE EFFECT OF THE 6 CLOSEST
NEIGHBORS OF A, WHICH ARE SPHERICALLY SYM. RIGID IONS OF TYPE B, EACH OF
WHICH IS CHARACTERIZED BY A CHARGE D. Q(R).   THE RELATION S SUB11 PLUS
2S SUB44 EQUALS 0 CAN ONLY BE FULFILLED FOR ALPHA P-ALPHA A EQUALS 0,
WHERE A IS THE INTERIONIC DISTANCE IN A NONDEFORMED CRYSTAL, IF THE
DEFORMATION DISTORTION OF THE ION SHELLS IS IGNORED.   THIS RESULT IS
APPLICABLE TO SINGLE ATOM CRYSTALS.   FACILITY: DONETS. GOSUNIV.,
DONETSK, USSR.

UNCLASSIFIED

USSR   UDC   539.1.074.2

VOLKOV, N. G., GORBACHENKO, G. M., and LYAPIDEVSKIY, V. K.

"Determining the Saturation Current in an Ionization Chamber from
Two Experimental Points"

Moscow, Pribory i Tekhnika Eksperimenta, No 1, 1973, pp 94-96

Abstract: The authors note that measurement of the saturation cur-
rent in an ionization chamber at high radiation intensities is de-
termined by computational methods, which are not always accurate.
They therefore propose a highly accurate way of making this mea-
surement from two arbitrary points on the volt-ampere character-
istic of the chamber. Use is made of two equations: $I = I_S \sin 2\xi/2\xi$, and $U = Bf(\xi) \cos \xi/\xi$: in which I and U are the current and
voltage in the chamber; I_S is the saturation current; B is a con-
stant whose value depends on the radiation intensity, the chamber
dimensions, and the gas characteristics; ξ is a parameter varying
from $\pi/2$ to 0; and $f(\xi)$ is a correcting function. The accuracy of
this method is explained, and a way of simplifying the procedure
under certain conditions is presented. The authors thank M. S. Ko-
zodayev for his comments.

1/1
                                - 71 -

Acc. Nr: AP0036833

Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i
Immunobiologii., 1970, Nr 1, pp 140 - 142

EXPERIENCE IN SMALLPOX VACCINATION IN ALEXANDRIA

I. I. Gorbachenko

The work was carried out for improvement of the quality of smallpox vaccination in Alexandria of the Kirovograd region of the Ukrainian SSR. With the aid of certain organizational measures it was possible to improve the quality of revaccination; this led to increase of the number of immediate reactions in the revaccinated from 25.9 in 1967 to 46.4 in 1967.

Choice revaccination at two establishments of the town demonstrated that primary vaccinal reactions occurred only in 4.1, accelerated — in 38.1 and immediate — in 57.8%, of the vaccinated; this pointed to the presence of smallpox immunity in the population.

D. K.,

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REEL/FRAME
19721750

USSR   UDC: 621.374.32

GORBACHEV, A. A., GRECHIKHIN, A. I., Active Members of the Scientific and
Technical Society of Radio Engineering, Electronics and Communications imeni
A. S. Popov

"A Pulse Radio Signal Accumulator"

Moscow, Radiotekhnica, Vol. 26, No 6, Jun 71, pp 87-90

Abstract: This article presents a description and circuit analysis of a
device for filtering out periodic radio pulses from a mixture of useful signal
with additive noise. In addition to accumulating a given number of discrete
pulse values, the device takes off the accumulated values in the proper order,
interpolates, and transmits the filtered signal to an external circuit. As a
distinguishing feature of the device, it is designed for accumulation of a
relatively large number of pulses (10^3-10^4) at a prf of 50-100 HZ. The pro-
posed circuit is a multiple-channel analog system with averaging of discrete
signal samples on capacitive accumulators. The signal isolation error is
evaluated. The accumulator was used for filtering pulses with a duration of
500 us and a spectral width of about 40 kHz spaced from 1 to 100 ms apart
against a background of normal noise. With accumulation of 4800 pulses, the
ratio of the average signal power to the average power of the error due to
both the input noise residue and distortions of the function in the device
coupled with instrument noises was $(1-4) \cdot 10^2$. The level of commutation noises

1/2

GORBACHEV, A. A., GRECHIKHIN, A. I., _Radiotekhnica_, Vol. 26, No 6, Jun 71, pp 87-90

at the output of the accumulator is about 20 mV, while the maximum output signal level is 1 V. The interpolation filter is made up of four resonance circuits. The device can be improved by using low-noise and high-speed multi-channel commutators to increase filtration accuracy and extend the range of usable frequencies and the dynamic range of the instrument.

2/2

USSR   (6)   UDC 621.391.82:621.317.346

GORBACHEV, A. A. and DANILOV, V. I.

"Estimating the Intensity of a Noise Signal in AM Oscillations"

Abstract: In special radio receivers, particularly radioastro-
nomical observation equipment, there is need for measuring the
noise. The purpose of this paper is to determine the error in
these measurements with quasi-optimal treatment of the received
oscillations when the output of the high-frequency part of the
receiver contains an amplitude-modulated signal in noise. It
is assumed that the distribution of instantaneous noise values at
the output and the distribution of the amplitude time function are
normal. The method of maximum probability is used to estimate
the noise envelope dispersion. An expression is obtained for the
shift in the dispersion estimate, and a description is given of
experimental equipment designed to verify this expression.
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USSR

GORBACHEV, A. A., et al, Izvestiya VUZov SSSR Radiofizika, Vol 13, No 1, 1970, pp 88-92

Differences between the theoretical and experimental curves for the dispersion shift are explained by measurement errors.

2/2

1/2   038   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--ESTIMATING THE INTENSITY OF A NOISE SIGNAL IN AM OSCILLATIONS -U-

AUTHOR-(02)-GORBACHEV, A.A., DANILOV, V.I.

COUNTRY OF INFO--USSR

SOURCE--GOR'KIY, IZVESTIYA VUZOV SSSR RADIOFIZIKA, VOL 13, NO 1, 1970, PP
88-92
DATE PUBLISHED-------70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS, NAVIGATION

TOPIC TAGS--RADIO RECEIVER, SIGNAL TO NOISE RATIO, AMPLITUDE MODULATION,
RADIO ASTRONOMY, OSCILLATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1954   STEP NO--UR/0141/70/013/001/0088/0092

CIRC ACCESSION NO--AP0130737
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0130737

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN SPECIAL RADIO RECEIVERS,
  PARTICULARALY RADIOASTRONOMICAL OBSERVATION EQUIPMENT, THERE IS NEED FOR
  MEASURING THE NOISE. THE PURPOSE OF THIS PAPER IS TO DETERMINE THE
  ERROR IN THESE MEASUREMENTS WITH QUASI OPTIMAL TREATMENT OF THE RECEIVED
  OSCILLATIONS WHEN THE OUTPUT OF THE HIGH FREQUENCY PART OF THE RECEIVER
  CONTAINS AN AMPLITUDE MODULATED SIGNAL IN NOISE. IT IS ASSUMED THAT THE
  DISTRIBUTION OF INSTANTANEOUS NOISE VALUES AT THE OUTPUT AND THE
  DISTRIBUTION OF THE AMPLITUDE TIME FUNCTION ARE NORMAL. THE METHOD OF
  MAXIMUM PROBABILITY IS USED TO ESTIMATE THE NOISE ENVELOP DISPERSION.
  AN EXPRESSION IS OBTAINED FOR THE SHIFT IN THE DISPERSION ESTIMATE, AND
  A DESCRIPTION IS GIVEN OF EXPERIMENTAL EQUIPMENT DESIGNED TO VERIFY THIS
  EXPRESSION.   DIFFERENCES BETWEEN THE THEORETICAL AND EXPERIMENTAL
  CURVES FOR THE DISPERSION SHIFT ARE EXPLAINED BY MEASUREMENT ERRORS.

UNCLASSIFIED

1/2   009   UNCLASSIFIED   PROCESSING DATE--11SEP70
TITLE--NEUTRONACTIVATION SURVEY, THE METHOD OF APATITE AND OTHER FLUORINE
-BEARING MINERALIZATION DISCOVERY ON THE FLUORINE DISPERSION HALOES -U-
AUTHOR--GORBACHEV, A.N., KARPUNIN, A.M., MATUKANIS, L.F.

COUNTRY OF INFO--USSR

SOURCE--GEOLOGIYA I GEOFIZIKA, 1970, NR 3, PP 115-119

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--FLUORINE, FLUORITE, MINERALOGY, GEOLOGIC SURVEY, NEUTRON
   ACTIVATION ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1273   STEP NO--UR/0210/70/000/003/0115/0119

CIRC ACCESSION NO--AP0106054
                          UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--11SEP70
CIRC ACCESSION NO--AP0106054

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD PRINCIPLES AND THE
RESULTS OF FLUORINEMETRIC NEUTRONACTIVATION SURVEY, DEVELOPED AND
SAMPLED ON TRANSBAIKALIA APATITES ARE LISTED IN THE PAPER. AN
APPLICATION OF THE SURVEY IS RECOMMENDED FOR APATITE, PHOSPHORITE AND
FLUORITE MINERALIZATION PROSPECTING. THE WAYS FOR IMPROVEMENT OF THE
FIELD NEUTRON ACTIVATION FLUORINOMETRY AND LONG TERM PLAN OF ITS
APPLICATION FOR PROSPECTING OF OTHER COMMERCIAL MINERALS ARE MARKED.

UNCLASSIFIED

1/2   016   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--RESULTS OF BENCH AND INDUSTRIAL TESTING OF NEW TYPES OF COATING
  RUBBERS FOR CONVEYER BELTS -U-
AUTHOR-(04)-GORBACHEV, B.G., POLUNIN, V.T., GULENKO, G.N., FROLOV, V.I.

COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(3), 44-5

DATE PUBLISHED------70

SUBJECT AREAS--MATERIALS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ELASTOMER, MINING MACHINERY, ABRASIVE RESISTANCE, RADIOACTIVE
  TRACER, THALLIUM ISOTOPE, SYNTHETIC RUBBER, TEST METHOD
  POLYISOPRENE/(U)SKD SYNTHETIC RUBBER, (U)SKI3 ISOPRENE RUBBER, (U)BSK
  SYNTHETIC RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0834   STEP NO--UR/0138/70/029/003/0044/0045

CIRC ACCESSION NO--AP0124501
                    UNCLASSIFIED

USSR

GORBACHEV, B. I.: IVANITSKIY, P. G.: KROTENKO, V. T.: PASECHNIK, M. V.
(Institute of Nuclear Research of the Ukrainian Academy of Sciences, Kiev)

"Study of Inelastic Scattering of Slow Neutrons by Nickel Specimens of Differing Isotopic Composition"

Kiev, Ukrainskiy Fizicheskiy Zhurnal; April 1973, pp 558-63

Abstract: Inelastic scattering cross sections of slow neutrons by polycrystalline specimens of nickel with a natural isotopic mixture, with an incoherent dispersive isotopic mixture and with the isotopic mixture enriched by the isotope Ni^{62} to $\sim 95\%$, were measured with high statistical accuracy. With respect to these scattering cross sections the frequency distribution functions $g(\Delta E)$ of the normal oscillations of the atoms in a nickel lattice were derived.
      The effect of coherence on the accuracy of the derivation of the function $g(\Delta E)$ of the coherent diffusers in the incoherent approximation and the effect of the isotopic composition of the specimens on the function $g(\Delta E)$ were discussed.

1/1

ACCESSION NO--AP0124501
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEVERAL BRANDS OF ELASTOMER
  LININGS FOR CONVEYER BELTS (USED IN THE MINING INDUSTRY) WERE TESTED FOR
  ABRASIVE WEAR BY A RADIOACTIVE METHOD USING PRIME204 TL AS A POINT
  TRACER. THE EXPTL. PROCEDURE WAS DESCRIBED. BENCH AND INDUSTRIAL TESTS
  INDICATED THAT BSK PLUS SKD AND SKI 3 PLUS SKD ELASTOMERS HAD THE LOWEST
  ABRASIVE WEAR.   FACILITY: MOSK. GORN. INST., MOSCOW, USSR.

USSR

UDC 621.316.722.1 (083.8)

GORBACHEV, B.V., LYSYAKOV, YU. M.

"Continuous-Key D-C Voltage Regulator"

USSR Author's Certificate No 259180, filed 19 Sept 68, published 5 May 70 (from RZh-Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12B548P)

Translation: The circuit of a d-c voltage regulator is proposed, in which parallel operation of a transistorized regulator with continuous control, and a key [klyuch] transistor with a thyristor key is used, which differs in the fact that both regulators are fed from one power supply. A resistor--load-current pickup [datchik] of the continuous regulator is connected to the collector circuit of the control transistor of the continuous regulator. Voltage from the pickup controls the threshold device, which in one condition includes one of the blocking generators, and in second condition includes the second blocking generator. The first blocking generator includes the gate circuit of the thyristor operating as a key control element. The second blocking generator includes the gate circuit of the second thyristor, which together with a capacitor forms the quenching circuit of the power control thyristor. Thus, modulation of the duration of the key regulator is accomplished. 1 ill. S.D.

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Controls

USSR   UDC 621.316.722.1(078.8)

GORBACHEV, S.V.

"Continuous Pulse D-C Voltage Regulator"

USSR Author's Certificate No 2, 584, Filed 15 Sept 68, Published 9 Mar 70 (From RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10B792)

Translation: A block diagram for a voltage regulator is proposed in which the principles of pulse and continuous control are used simultaneously. For this purpose, a regulator of small power with continuous control is investigated, which tracks the output voltage of a regulator and guarantees suppression of pulsations and voltage jumps in transient regimes. Moreover, a power regulator is used based on a transistor with pulse control which tracks the current of the regulator, guaranteeing entry of basic (osnovnoy) power at its output. With a load current less than a fixed value, the pulse regulator is cut off and the load is supplied only from the regulator with continuous control. 1 ill. S.D.

1/1

1/3 ·   043   UNCLASSIFIED   PROCESSING DATE--02OCT70
TITLE--MEASUREMENT OF TOTAL ELECTRON CONCENTRATION IN THE POLAR IONOSPHERE
   DETERMINED FROM SIGNALS OF THE THIRD ARTIFICIAL EARTH SATELLITE,
AUTHOR-(04)-SOLODOVNIKOV, G.K., MISYURA, V.A., MIGUNOV, V.M., GORBACHEV,
   I.I.
COUNTRY OF INFO--USSR, ANTARCTICA

SOURCE--MOSCOW, GEOMAGNETIZIM I AERONOMIYA, VOL X, NO 2, 1970, PP 334-336

DATE PUBLISHED-------70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS, ATMOSPHERIC SCIENCES, SPACE
   TECHNOLOGY, NAVIGATION
TOPIC TAGS--IONOSPHERE, POLAR AREA, ELECTRON DENSITY, SOLAR ACTIVITY,
   ARTIFICIAL EARTH SATELLITE, ANTARCTIC STATION, SIGNAL
   RECEPTION/(U)SPUTNIK 3 SATELLITE, (U)MIRNYY ANTARCTIC STATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1662   STEP NO--UR/0203/70/010/002/0334/0336

CIRC ACCESSION NO--AP0109656
                            UNCLASSIFIED

CIRC ACCESSION NO--AP0109656

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER GIVES THE RESULTS OF
DETERMINATIONS OF THE TOTAL ELECTRON CONTENT IN THE POLAR IONOSPHERE OF
BOTH HEMISPHERES DURING THE PERIOD OF HIGH SOLAR ACTIVITY ON THE BASIS
OF DATA ON THE FARADAY EFFECT OF SIGNALS OF THE THIRD ARTIFICIAL EARTH
SATELLITE AT A FREQUENCY OF 20 MC-SEC REGISTERED AT MURMANSK AND MIRNYY
DURING THE PERIOD MAY-JULY 1968. AES SIGNALS WERE PICKED UP WITH PLAN
POLARIZED ANTENNAS. DATA FROM 210 OBSERVATIONS AT MURMANSK AND 106
OBSERVATIONS AT MIRNYY WERE PROCESSED. THE RECORDS WERE DISTINCTLY
DIFFERENT FROM THOSE FOR THE MIDDLE LATITUDES. WHEREAS FOR THE MIDDLE
LATITUDES THERE IS USUALLY A CLEARLY EXPRESSED MONOTONIC VARIATION OF
THE ANGLE OF ROTATION OF THE RADIO WAVE POLARIZATION PLANE PHI SUBPHI,
THE POLAR REGIONS ARE CHARACTERIZED BY A NONMONOTONIC CHANGE IN PHI
SUBPHI AT DIFFERENT TIMES OF DAY, REGARDLESS OF SATELLITE ALTITUDE.
THIS NONMONOTONIC VARIATION OF PHI SUBPHI INDICATES THAT THE POLAR
IONOSPHERE CONTAINS EXTREMELY STRONG INHOMOGENEITIES OF ELECTRON
CONCENTRATION DURING BOTH DAYTIME AND NIGHTTIME. MEASUREMENTS WERE
CONVERTED TO THE TOTAL NUMBER OF ELECTRONS IN A VERTICAL COLUMN OF THE
IONOSPHERE OF A UNIT CROSS SECTION (N SUBO). THE N SUBO VALUES WERE
USED IN CONSTRUCTING DAILY CURVES OF THE DEPENDENCE OF TOTAL NUMBER OF
ELECTRONS IN A VERTICAL COLUMN AS A FUNCTION OF TIME OF DAY. THESE
CURVES ARE FOR 64DEGREES N AND S. CURVES WERE CONSTRUCTED ONLY FOR
THOSE ORBITAL SEGMENTS INTERSECTING 64DEGREES. THIS LARGELY EXCLUDED
THE LATITUDE EFFECT. IN BOTH HEMISPHERES THE N SUBO MAXIMUM WAS AT
APPROXIMATELY THE SAME TIME, ABOUT 1400 LT.

UNCLASSIFIED

CIRC ACCESSION NO--AP0109656
ABSTRACT/EXTRACT--DURING THE COURSE OF THE DAY N SUB0 IN THE SOUTHERN
  HEMISPHERE CHANGES BY A FACTOR OF ABOUT 4. THIS CANNOT BE ATTRIBUTED TO
  DIFFERENCES IN SATELLITE ALTITUDE SINCE IN ALL CASES IT WAS ABOVE THE F2
  MAXIMUM. THE DIFFERENCE CAN PROBABLY BE ATTRIBUTED TO THE DIFFERENCE IN
  SEASONS IN THE TWO HEMISPHERES. DURING LOW ACTIVITY N SUB0 IN THE POLAR
  LATITUDES IS APPROXIMATELY THREE TIMES LESS THAN DURING HIGH ACTIVITY.
  IN THE MIDDLE LATITUDES THESE CHANGES ATTAIN A FACTOR OF 7.   DURING
  BOTH HIGH AND LOW ACTIVITY N SUB0 IN THE MIDDLE LATITUDES IS 1.5-2 TIMES
  GREATER THAN IN THE POLAR REGIONS.

UNCLASSIFIED

USSR

UDC 621.791(047):629.12

GORBACHEV, I. V., and AGRONOMOV, S. N.

"The Dal'zavod Plant, Pioneer in the Use of Welding in Shipbuilding"

Moscow, Svarochnoye Proizvodstvo, No 4, Apr 70, pp 29-30

Abstract: Since 1920 the "Dal'zavod" plant (shipyard) has pioneered in the use of electrowelding in shipbuilding and ship repair, during which time it has conducted original and collaborative research in this field, and has produced various new equipment. In most instances, research has been in collaboration with the Central Scientific Research Institute of Welding Technology (TsNIITS), the Institute of Electrowelding imeni Ye. O. Paton (IES) and the Far Eastern Polytechnic Institute. The plant produced the country's first all-welded tugboat in 1930. All varieties of welding have been mastered in order to accommodate the large variety of ships handled by the plant--all Soviet and many foreign types. Special attention has been given to carbon-dioxide welding (for thin-sheet structures) and to both manual and mechanized argon-arc welding of hull elements (from aluminum alloys) as well as copper-nickel alloy conduits. The plant has introduced new techniques for repairing alloy screw propellers, using semi-automatic argon-arc welding. For several years research has been conducted on the gas-electric cutting of non-ferrous metals and stainless steel, along with the development of the required equipment.

USSR

GORBACHEV, L. A., LEBEDEV, T. A., and MARINETS, T. K., Leningrad

"Periods of the Process of Fatigue Failure"

Moscow, Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 5, Sep-Oct 70, pp 133-136

Abstract: An attempt is described to establish a relation between changes in the microstructure of a cycle-loaded metal (08 KP steel) and changes in the shape of the temperature curve. It was found that typical sections of this curve indirectly describe specific stages (periods) of fatigue failure. It is proposed that the process of fatigue failure be considered to comprise five periods. An assumption is made that the fatigue failure periods for one and the same metal, with respect to percentage and total service life, are constant magnitudes. The fatigue failure periods are as follows: 1) Incubation. Its duration depends on a number of factors, specifically on cycle stress. 2) Period of active formation of slip bands. 3) Period of local accumulation of damages and changes incurred during the first and second periods. This period

1/2

USSR

GORBACHEV, L. A., et al, Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki,
No 5, Sep-Oct 70, pp 133-136

creates conditions for the generation and growth of a main crack. 4) Period
of propagation and growth of the main crack. 5) Period of specimen failure.
The duration of this period for specimens of small cross section is insignifi-
cant. All these periods are clearly distinguished on the temperature curve.

2/2

USSR

GORBACHEV, L. P. and SAVCHENKO, Yu. N.

"Magnetosonic Signal Generation by an Acoustical Wave Pulse in an Anisotropic Conducting Medium"

Abstract: This paper investigates theoretically the generation of a magnetosonic signal by an acoustical wave pulse in an anisotropically conducting partially ionized medium. The generating system is considered in the orthogonal x,y,z space with an external uniform magnetic field directed along the z axis, and all quantities varying only in the x direction. For $x < x_1$, where x_1 is some particular value, the gas medium in which the generation occurs is un-ionized; the ionized medium is considered to be three-component, consisting of ions, electrons, and neutral particles. The magnetic pressure is assumed much larger than the gas-dynamic pressure, and the collisions of the charged particles are neglected. Beginning with the linearized equations of ion and electron motion, the authors derive the magnetosonic wave equation through the Maxwell equations with the displacement current neglected. A numerical example is considered. The authors thank V. M. Lazarev for doing

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USSR

GORBACHEV, L. P., et al, Magnitnaya gidrodinamika, No 1, 1973, pp 85-89

the calculations of the numerical example on the electronic computer.

USSR   UDC 669.295.5.01S.5.537.312.62

BAYKOV, A. I., KUZNETSOVA, M. I., SHADSKIY, D. V., MEL'NIKOVA, L. V., MIKHAYLOV, S. M., GORBACHEVA, L. S.

"Technological and Superconducting Properties of 60 T Alloy"

Translation: The technological and superconducting properties of 60 T alloy are studied. The dependence of mechanical properties on the degree of cold deformation and diameter of wire is shown. The mechanism of deformation of the alloy at high temperatures is studied. It is established that the high plastic properties of the alloy allow cold drawing of wire to be performed at a rate of 100 m/min. The influence of intermediate annealing and hardening, as well as final annealing, on the critical current density is studied as a function of the external magnetic field. 7 figs; 4 tables; 4 biblio refs.

1/1

TITLE--SECONDARY RECRYSTALLIZATION IN COLD ROLLED SILICON STEEL ALLOYED IN
   THE ANNEALING PROCESS -U-

AUTHOR-(05)-AFANASYEV, S.V., BARYATINSKIY, V.P., GORBACHEV, V.N.,
   KRYZHANOVSKIY, V.V., MOLOTILOV, B.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 276-80

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--SILICON STEEL, METAL RECRYSTALLIZATION, COLD ROLLING,
   TRANSFORMER STEEL, ALLOY COMPOSITION, METAL TEXTURE, HIGH QUALITY STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0190   STEP NO--UR/0048/70/034/002/0276/0280

CIRC ACCESSION NO--AP0115894
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0115894
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROCESS OF SECONDARY RECRYSTN.
IN THE PRESENCE OF S WAS STUDIED ON COLD ROLLED, HIGH PURITY TRANSFORMER
STEEL SHEET 0.05, 0.08, AND 0.10 MM THICK TO DET. THE EFFECTS OF THE
PRIMARY STRUCTURE, HEAT TREATMENT CONDITIONS, AND THE S CONTENT ON THE
FINAL PRODUCT. THE STEEL CONTAINED C 0.007, MN 0.08, SI 3.05, P 0.006,
S 0.0025, NI 0.04, CR 0.01, CU 0.05, AL 0.01, AND N 0.0107PERCENT.
ALLOYING THE THIN SHEET IN THE ANNEALING PROCESS MADE IT POSSIBLE TO
CONTROL THE SECONDARY RECRYSTN. THE STRUCTURE AND TEXTURE OF THE
SECONDARY MATRIX DEPENDED ON BOTH THE INITIAL STRUCTURE AND THE AMT. OF
S INTRODUCED BY DIFFUSION. AT RELATIVELY LOW S CONCNS. THE SECONDARY
RECRYSTN. DEVELOPED A RIBBED TEXTURE WHEREAS AT HIGHER S CONCNS. IT
RESULTED IN AN ORIENTATION NEAR (111) (110). A PRELIMINARY RECRYSTN.
OWING TO HEAT TREATMENT AND A SUBSEQUENT STABILIZATION OF THE PRIMARY
MATRIX BROUGHT ABOUT THE FORMATION OF A MORE PERFECT TEXTURE IN
SECONDARY RECRYSTN.   FACILITY: TSNIICHM IM. BARDINA, MOSCOW,
USSR.

UNCLASSIFIED

CIRC ACCESSION NO--AP0115745

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE TECHNOLOGY USED IN MANUFG.
VERY FINE, ORIENTED TRANSFORMER STEEL SHEET (0.05-0.15 MM THICK) FOR
INSTRUMENTS AND APP. UTILIZING A WIDE RANGE OF FREQUENCIES IS GREATER
THAN OR EQUAL TO 400 HZ DIFFERS IN MANY ASPECTS FROM THE CONVENTIONAL
TECHNOLOGY USED FOR HEAVIER GAGE SHEET (0.2-0.5 MM), AS THE FINE SHEET
IS MADE GENERALLY FROM HEAVIER GAGE, COLD ROLLED SHEET OF AN ORIENTED
TEXTURE RATHER THAN FROM NONORIENTED MATERIAL. IN THE COURSE OF MANUFG.
THE FINE SHEET, THE (110) (001) TEXTURE OF THE THICKER TRANSFORMER SHEET
IS TRANSFORMED BY COLD ROLLING INTO A DEFORMATION TEXTURE (111) MEAN
VALUE OF 112 WHICH AGAIN IS CHANGED TO 1KO MEAN VALUE OF 001 BY
SUBSEQUENT ANNEALING, K DEPENDING ON THE DEFORMATION RATIO AND THE TEMP.
OF THE ISOTHERMAL ANNEAL. THUS, THE FINAL TEXTURE IS THAT FORMED BY
PRIMARY RECRYSTN.; ITS DEGREE OF PERFECTION .(WHICH DETS. THE MAGNETIC
PROPERTIES OF THE MATERIAL) DEPENDS ON THE INITIAL TEXTURE AND GRAIN
SIZE (BEFORE ROLLING), THE DEFORMATION RATIO APPLIED, AND THE TEMP. AND
DURATION OF FINISH ANNEALING.   SECONDARY RECRYSTN. IS SUPPRESSED SINCE
IT WOULD BRING ABOUT TEXTURE DETERIORATION. ANNEALING AT
950-1000DEGREES FOR A PERIOD OF TIME NOT EXCEEDING THE INCUBATION PERIOD
OF SECONDARY RECRYSTN. (20 SEC) OR CONTROLLED ANEALING PERMITTING
LONGER EXPOSURES TO HIGH TEMPS. IS RECOMMENDED; THE FORMER TREATMENT MAY
NOT BE FOLLOWED BY A SECONDARY ANNEAL. THE TECHNOLOGICAL GUIDELINES
GIVEN PERMIT THE MANUF. OF FINE SHEET EXHIBITING SP. CORE LOSSES OF
SIMILIAR TO 12W-KG. | FACILITY: TSNIICHM IM BARDINA, MOSCOW,
USSR.

UNCLASSIFIED

TITLE--EFFECT OF THE CONFIGURATION OF THE CONTACT SURFACE OF THE LARGE
BELL ON THE OPERATION OF A BLAST FURNACE -U-

AUTHOR--KUDOYAROV, M.S., ZHIGULEV, P.G., POLYANSKIY, D.S., KORNEV, V.B.,
GORBACHEV, V.P.

COUNTRY OF INFO--USSR

SOURCE--STAL' 1970, 30(1), 12-15

DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--BLAST FURNACE, METALLURGIC FURNACE, COMPONENT LIFE EXPECTANCY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0142   STEP NO--UR/0133/70/030/001/0012/0015

CIRC ACCESSION NO--AP0103821
          UNCLASSIFIED

CIRC ACCESSION NO--AP0103821
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   SHORTENED LIFE OF LARGE BELLS
CAUSED BY EXCESSIVE LEAKAGE WHEN THE TOP PRESSURE IS SIMILAR TO 1 ATM
SUGGESTED REPLACING THE CONICAL CONTACT SURFACE OF A 53DEGREES LARGE
BELL WITH A SPHERICAL ONE. THE POSSIBILITY WAS INVESTIGATED ON A 1:25
SCALE TRANSPARENT FURNACE TOP MODEL, AND NEW BELLS WERE INSTALLED ON 2
FURNACES.   THEIR PERFORMANCE IS DESCRIBED. A SPHERICAL CONTACT SURFACE
LEADS TO A TIGHTER JOINT AND THEREFORE TO A LONGER LIFE, RENDERS THE
CHARGE TRAJECTORY STEEPER, LOWERING ITS IMPACT POINT ON THE THROAT ARMOR
BY 300-320 MM, AND TENDS TO INCREASE THE PERIPHERAL GAS STREAM.

USSR

UDC: 621.315.592

GORBACHEV, V. V., OKHOTIN, A. S., MALOVETSKAYA, V. M., and PUTILIN,
I. M. Moscow Institute of Steel and Alloys

"Investigating the Infrared Reflection Spectra of Tin Telluride"

Abstract: Because of the high concentration of free charge carriers
in degenerate semiconductors, most methods for determining the bas-
ic parameters of the semiconductor material become complex. Hence,
the optical method of investigation is preferred. In this paper,
a description is given of experiments for finding the effective
mass of the holes and the relaxation time in tin telluride (SnTe)
by experimentally measuring infrared reflection spectra. In these
experiments, the effect of the charge carrier concentration on the
position of the plasma minimum was investigated. The reflection
coefficient was measured in monocrystalline SnTe, grown by the
Bridgeman method, with concentrations of $3.25 \cdot 10^{20}$ to $6.25 \cdot 10^{20}$
per cc. Specimens were cut in the form of plates 0.5 mm thick,
and the carrier concentration in them was determined by the Hall
effect.
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AP9053468

A. N. Kirgintsev, L. I. Gorbacheva

THE EFFICIENCY OF NORMAL FREEZING
OF TIN IN A ROTATING CONTAINER

The normal vertical freezing of tin mixed with bismuth and copper has been inves-
tigated. The efficiency of the purification of tin from bismuth and copper admixtures
under normal horizontal and vertical freezing has been compared.

19492313

101749t Antimicrobial fabrics. Kozinda, Z. Yu.; Gorbache-va, I. N.; Konkin, A. A.; Shcheglova, G. V. (MTI, Moscow, USSR). Tekst. Prom. (Moscow) 1970, 30(1), 55-6 (Russ). Wool fabrics modified by grafting with 2-methyl-5-vinylpyridine were treated with 1% aq. soln. of $Cu(OAc)_2$ or $AgNO_3$. Similarly, wool grafted with methacrylic acid was treated with 1% pentachloro-phenol or hexachlorophene solns. in MeOH. The grafting in-creased the tensile strength of the fabric by 18-20%. The bacteri-cidal additives inhibited the propagation of *Staphylococcus au-reus* and intestinal bacteria when 1-1.5% Cu or Ag or $\geq 7.32\%$ chlorinated phenols were present.   CPJR

REEL/FRAME
19821069

USSR

UDC: 537.312.62

BAYKOV, A. I., KLEYN, G. A., GORBACHEVA, L. S., ALIMOVA, R. N., MIKHAYLOV, S. M., LITVINOVA, I. I., BEREZIN, R. G.

"Investigation of Some Properties of the Ternary Alloy SS-2 in the Process of Deformation and Vacuum Annealing"

Moscow, Sverkhprovodyashchiye splavy i soyedin.--sbornik (Superconductive Alloys and Compounds--collection of works), "Nauka", 1972, pp 157-160 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D563 [résumé])

Translation: A series of experiments is done to determine the influence of intermediate annealing on the technological, mechanical, electrical and structural properties of wire made from SS-2 alloy, which is a member of the niobium-titanium-zirconium ternary system. The resultant data show that intermediate annealing embrittles SS-2 wire to a greater extent as the diameter of the wire decreases and the annealing temperature increases. X-ray structural analysis showed that there is no change in phase composition of the alloy under the given annealing conditions; all specimens have the structure of a β-solid solution with lattice parameter a = 0.335 nm. An examination of powder patterns obtained from annealed wire of all diam-

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USSR

BAYKOV, A. I. et al., Sverkhprovodyashchiye splavy i soyedin.--sbornik,
"Nauka", 1972, pp 157-160

eters showed that the temperature for beginning of recrystallization of
all diameters of wire is the same -- 700°C. Further annealing increases
grain size, an especially intensive increase in grain size being observed
at annealing temperatures of 1000 and 1100°C. One illustration, bibliog-
raphy of six titles.

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USSR

UDC: 537.312.62

BAYKOV, A. I., KUZNETSOVA, M. I., SHADSKIY, D. V., MEL'NIKOVA, L. V., MIKHAY-LOV, S. M., GORBACHEVA, L. S.

"Technological and Superconducting Properties of 60T Alloy"

V sb. Probl. sverkhprovodyashch. materialov (Problems of Superconducting Materials--collection of works), Moscow, "Nauka", 1970, pp 193-202 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D555)

Translation: This article deals with the technological superconducting properties of 60T alloy. It is shown how the mechanical properties depend on the degree of cold deformation and the diameter of the wire. The mechanism of deformation of the alloy at high temperatures is considered. It is found that the high plastic properties of the alloy permit cold drawing of wire at a rate of 100 m/min. An investigation is made of the effect which intermediate annealing and quenching as well as final annealing have on the density of the critical current as a function of the external magnetic field. Seven illustrations, four tables, bibliography of four titles. Resumé.

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Abstract: It is shown that the emission spectrum of europium in cubic and hexagonal ZnS-Eu consists of four elementary bands, two of which ($h\nu_{max}$=1.75 and 1.90 ev) occur in the spectrum of both phases. Investigation of the EPR spectra showed that europium is in the bivalent state and that a high concentration of the dopant favors formation of the cubic modification of zinc sulfide. The variation, with concentration, is found for the intensity ratio of bands $h\nu_{max}$= 1.75 and 1.90 ev in the hexagonal and cubic phases. The authors thank A. F. Nalgranyan, L. M. Tsyganova, and A. G. Glyadelkina for assisting in the work.

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UDC 340.67:632.95

USSR

GORBACHEVA, N. A., Scientific Research Institute of Forensic Medicine, USSR
Ministry of Health, Moscow

"The Use of Some Sorbents in the Forensic Chemical Analaysis of Methyl-Ethyl
Thiophos. Report I"

Abstract: Since it is sometimes necessary in forensic medicine to identify
not only methylethyl thiophos (used as a pesticide) but also its decomposi-
tion products and admixtures, a study was performed to determine the sorp-
tion of methylethyl thiophos, p-nitrophenol, and the emulsifier OP-7 (the
product of treating mono- and dialkylphenols with ethylene oxide) from various
solvents (acetonitrile, methanol, ethanol, acetone, ethyl ether, chloroform,
dichloroethane, benzene, toluene, hexane, heptane, and petroleum ether) in
microcolumns of carbon AG-5, BAU, SKT, OU-B, and KAD, silica gel KSK, aqueous
silicic acid, and KIL). Some solvents allow simultaneous sorption of the
toxic compounds, while others allow their separation. The individual results
are tabulated in charts and may be useful in selecting the most appropriate
method of analysis.

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USSR

GORBACHEVA, N. P. and ZAKHAROV, A. M.

"Experimental Investigation of Angular Separation at the Far Tropospheric Scattering Line"

Translation: Results are given of an experimental investigation into the angular separation in the vertical plane at the far tropospheric scatter (FTS) line in the 4 GHz range. It is shown that, to counter slow signal fading at the FTS lines, an angular distance equal to the approximate width of the DN antenna (of the order of 1°) may be used. The presence of an optimal angle of antenna elevation, depending on meteorological conditions, is confirmed. Bibliography of two. A. L.

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UDC 532.593

USSR

GORBACHEVA, N. P., Moscow

"The Problem of Excitation of Seismic Waves by Explosions in Soft Soil"

Novosibirsk, Fizika Goreniya i Vzryva, No. 4, Dec. 70, p. 549-555.

Abstract: Experiments were performed using explosives with normal and reduced detonation velocities in order to study the dependence of the explosive energy transferred to the elastic wave on the characteristics of the action of the explosive source on the earth. The seismic effect of the explosion was found to be independent of the type of explosive used. The size of the explosive cavity was also found to be independent of explosive characteristics. The properties of the source did influence the formation of surface waves.

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USSR

GORBACHEVA, O. S.

"Using Dynamic Programming for Optimum Planning of Extraction and Processing of Subterranean Waters"

Moscow, Mat. metody resheniya ekon. zadach--sbornik (Mathematical Methods of Solving Economics Problems--collection of works), No 3, "Nauka", 1972, pp 196-201 (from RZh-Kibernetika, No 5, May 73, abstract No 5V666by Ye. Gabovich)

Translation: The author considers the problem of optimum distribution of a planned volume of production of iodine, bromine and other components among enterprises which use underground water as their raw material. Minimum national economic expenditures are used as the criterion of optimality. The problem is broken down into two sub-problems. The following problems are considered for each enterprise of the sector.
    1. The problem of selecting the optimum scheme for developing the underground water deposits serving this enterprise while minimizing overall expenditures on extraction.

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USSR

GORBACHEVA, O. S., Mat. metody resheniya ekon. zadach, No 3,
"Nauka", 1972, pp 196-201

    2. The problem of choosing the optimum scheme for pro-
cessing subterranean waters.
    3. The problem of finding the optimum scheme for dumping
waste waters.
    As a result of solving a series of problems 1-3, the
author finds the dependence of minimum expenditures per enter-
prise as related to the volume of subterranean water extracted,
the amount of water processed and the amount of waste water,
and this relation is then used in constructing the target
function of the overall problem. The problem is mathemati-
cally formulated. The formulation contains problems 1-3 as
blocks. In addition, the overall problem contains a connec-
tive problem which joins these blocks; it is proposed that
a dynamic programming method be used for solving this con-
nective problem in the case of two or three extracted com-
ponents. It is noted that when the number of components ex-
ceeds three, the connective problem can be effectively solved

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USSR

GORBACHEVA, O. S., Mat. metody resheniya ekon. zadach, No 3,
"Nauka", 1972, pp 196-201

only with the appropriate approximation of Belman functions.
At the same time, from a practical standpoint the problem is
to extract only two components, so that the use of dynamic
programming is completely justified.

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1/2   008   UNCLASSIFIED   PROCESSING DATE---20NOV70
TITLE--BUTYL SALICYLATE -U-

AUTHOR-(04)-YERIKHOV, V.I., VIGDOROV, A.S., TOROCHESHNIKOVA, L.V.,
   OGREACHEVA, S.N.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 266,765
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, CHEMICAL SYNTHESIS, ESTERIFICATION, AZETROPE,
   SALICYLATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1738   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132004
-------------------------------UNCLASSIFIED-----------------------------------

CIRC ACCESSION NO--AA0132004
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BU SALICYLATE (I) WAS PREPD. BY
   THE ESTERIFICATION OF SALICYCLIC ACID WITH EXCESS BUOH IN THE PRESENCE
   OF ACID CATALYSTS AT THE B.P. OF THE REACTION MIXT. AND BY THE
   SIMULTANEOUS DISTN. OF AN H_2O BUOH AZEOTROPE.   THE SEPN. OF I WAS
   SIMPLIFIED BY VACUUM DISTG. AN AZEOTROPE OF I AND UNREACTED SALICYCLIC
   ACID WHICH WAS SEPD. BY CRYSTN. AND FILTRATION.

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UNCLASSIFIED

Adsorption

Abstract: The conductometric method was used to study the adsorption of electrolytes from acetone solutions on highly dispersed zinc and the effect of the presence of the metallic phase on the state of the electrolytes. The concentration dependence of the equivalent conductance $\lambda = f(c\%)$ is calculated for KI, KCNS, LiBr and compared with data calculated according to the Onsager equation. It is shown that the presence of the metallic phase causes a sharp drop in the equivalent conductance of the electrolyte solution. This drop is more pronounced for univalent than bivalent salts. The effect is due to ion adsorption on the particles of the highly dispersed zinc. The acetone solutions of the uni- and bivalent electrolytes display

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USSR

GORBACHEVA, R. B., and LUNINA, M. A., Zhurnal Fizicheskoy Khimii,
Vol 44, No 11, Nov 70, pp 2938-2940

conductance anomalies in the region of the investigated concen-
trations. The concentration dependence for the univalent elec-
trolytes shows significant deviations from the theoretically
calculated dependence. The bivalent electrolytes show conduc-
tance an order below that of the univalent electrolytes at the
same concentrations. These anomalies are due to the specifics
of ion and molecule solvation in acetone and association phe-
nomena.

2/2

USSR

GORBACHEVA, R. M., PLAVNIK, G. I., SHPIL'MAN, V. I.

"Use of Digital Computers to Analyze the History of Formation of Upthrusts (and Algorithm)"

Translation: An algorithm is described and a block diagram is presented of a program allowing paleotectonic analysis to be performed by digital computer. The initial data used are the structural maps of the contemporary surfaces. Processing of these data by digital computer on the basis of the program presented allows the values of morphological parameters of paleographic upthrusts to be produced (marking of closed isohypses of paleographic upthrusts, number of complicating domes, area of upthrusts, its amplitude, etc.) and produces paleostructural maps.

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TITLE--EFFECT OF SUPRAMOLECULAR STRUCTURE ON THE STRENGTH OF SINGLE FIBERS
   OF VISCOSE RAYON CORD -U-
AUTHOR-(03)-SERKOV, A.T., ZUBAKHINA, N.L., GORBACHEVA, V.O.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VOLOKNA 1970, (2), 60-1

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MOLECULAR STRUCTURE, RAYON, POROSITY, MECHANICAL STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2010   STEP NO--UR/0183/70/000/002/0060/0061

CIRC ACCESSION NO--AP0125598
                          UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0125598
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SWELLING OF RAYON FIBERS IN
   AQ. NAOH SOLNS. HAS A MAX. AT 6PERCENT NAOH CONCN. THE MAX. IS
   CONSIDERABLY HIGHER FOR HIGH STRENGTH FIBERS. ALSO STRONGER FIBERS HAVE
   LOWER DISSOLUTION RATES IN CONCD. NAOH SOLNS. AND HIGHER LIGHT
   BIREFRENGENCE INDEXES. THE FIBER STRENGTH DEPENDS NOT ONLY ON THE
   FIBER POROSITY AND THE PRESENCE OF DEFECTS, BUT ALSO ON THE FIBER
   ORIENTATION.

                                        UNCLASSIFIED

TITLE--PROPERTIES OF FIBERS BASED ON COPOLYMERS OF ETHYLENE TEREPHTHALATE
WITH ETHYLENE HYDROXYISOPHTHALATE -U-

AUTHOR-(04)-GORBACHEVA, V.O., DYURNBAUM, V.S., IYEVLEVA, N.K., KHOKHLOVA,
N.S.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VOLOKNA 1970, (1), 9-11

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--COPOLYMER, POLYETHYLENE TEREPHTHALATE, HYDROXYL RADICAL,
SYNTHETIC FIBER, THERMAL ANALYSIS, DILATOMETRY, MICROSCOPY, THERMAL
EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/1826   STEP NO--UR/0183/70/000/001/0009/0011

CIRC ACCESSION NO--AP0100400
UNCLASSIFIED

CIRC ACCESSION NO--AP0100400
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE AND PHYSICOMECH.
   PROPERTIES OF ETHYLENE TEREPHTHALATE, (I

89

UNCLASSIFIED

Inorganic Compounds

USSR   UDC 621.357.12:661.25(088.8)

BEYDIN, V. K., VOROSHILOV, I. P., GORBACHEZ, A. K., NECHIPORENKO, N. N.,
and VOROSHILOV, P. KH.

"A Process for Preparing Sulfuric Acid"

Translation: A process is patented for reparing H_2SO_4 by the electrolysis of
an aqueous solution of metal sulfates, during the depolarization of the anode
by a sulfur gas in the presence of a catalyst in the electrolyte. This pro-
cess is improved in that to increase the degree of utilization of the sulfur
dioxide and to decrease the anode potential to increase the yield of the final
product, a soluble halide salt is added to the electrolyte as a catalyst
which is preferential for the cation, similar to the cation of the electrolyte.
The catalyst is added in concentrations of 0.1 to 50 grams/liter. The pro-
cess is carried out for a D_a of 500 to 3,000 amps/m^2 and at an electrolyte
temperature of 20-90°. For example, the electrochemical processing of Na_2SO_4,
the electrolysis is carried out in a three chamber electrolysis apparatus with
1/2

USSSR

BEYDIN, D. K., et al., USSR Author's Certificate No 189821, filed 6 Jan 69, published 5 Sep 72

an iron (wire-gauze) cathode and a hollow graphite anode with a porosity of 33%. The initial electrolyte (Na_2SO_4) is added to a concentration of 290/grams/liter in the middle compartment of the apparatus. To the electrolyte is added 0.56 grams/liter of NaCl. The sulfur dioxide evolves under a pressure of 150 mm of mercury in the hollow part of the anode and it migrates through the pores of the graphite to the anolyte. The process goes at temperatures of the original electrolyte of $60°$, and a charge on the electrolytic apparatus of 5 amps and D_a of 1000 amps/m². It was determined that the anode potential was 1.15 volts and the efficiency of the utilization of the sulfur gas was 75-80%.

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MATHEMATICS
Differential & Integral Equations

USSR

GORBACHUK, V. I.; GORBACHUK, M. L. (Institute of Mathematics, Ukrainian Academy of Sciences)

"Problems in the Spectral Theory of a Second-Order Differential Equation with Unbounded-Operator Coefficients"

Kiev, Ukrainskiy Matematicheskiy Zhurnal; January-February, 1971; pp 3-14

ABSTRACT: Given H, a separable Hilbert space, and $L_2(H, (0, b))$ $(0 < b \leqslant \infty)$, a space of vector functions $u(t)$ with values in H such that

$$\int_0^b \|u(t)\|^2 dt < \infty.$$ The authors study the minimum and maximum operators

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USSR

GORBACHUK, V.I., et al, Kiev, Ukrainskiy Matematicheskiy Zhurnal; January-February, 1971, pp 3-14

generated by the differential equation $\quad u'' + Au - q(t)u = \lambda u \qquad (1)$
and the boundary condition $\qquad u'(0) = Bu(0):\qquad (2)$

where $q(t) = q^*(t)$ (* denotes a transfer to a conjugate operator) is an operator function continuous in an isometric operator topology whose values are bounded operators in H; A is a self-conjugate operator in H semibounded from below; B is a bounded self-conjugate operator with the property $BD(A) \subset D(A)$; in addition, it is assumed that the functions $A^{1/2}q(t)A^{-1/2}$ and $Aq(t)A^{-1}$ are strongly continuous with respect to t. The existence of an operator spectral function of the problem (1), (2) is established by means of the method of directional functionals.

The article includes 19 equations. There are three references.

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MATHEMATICS
Differential & Integral Equations

USSR

GORBACHUK, V. I.; GORBACHUK, M. L. (Institute of Mathematics, Ukrainian Academy of Sciences)

"Problems in the Spectral Theory of a Second-Order Differential Equation with Unbounded Operator Coefficients"

ABSTRACT: Given H, a separable Hilbert space, and $L_2(H, (0, b))$ $(0 < b \leqslant \infty)$, a space of vector functions $u(t)$ with values in H such that

$$\int_0^b \|u(t)\|^2 dt < \infty .$$

The authors study the minimum and maximum operators

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GORBACHUK, V.I., et al, Kiev, Ukrainskiy Matematicheskiy Zhurnal; January-February, 1971, pp 3-14

generated by the differential equation $u'' + Au - q(t)u = \lambda u$ (1)
and the boundary condition $u'(0) = Bu(0)$:   (2)

where $q(t) = q^*(t)$ (* denotes a transfer to a conjugate operator) is an operator function continuous in an isometric operator topology whose values are bounded operators in H; A is a self-conjugate operator in H semibounded from below; B is a bounded self-conjugate operator with the property $BD(A) \subset D(A)$; in addition, it is assumed that the functions $A^{1/2}q(t)A^{-1/2}$ and $Aq(t)A^{-1}$ are strongly continuous with respect to t. The existence of an operator spectral function of the problem (1), (2) is established by means of the method of directional functionals.

The article includes 19 equations. There are three references.

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DIAGNOSTIC SIGNIFICANCE OF RADIOISOTOPIC METHODS IN EXAMINATION OF PATIENTS SUFFERING FROM NEPHROLITHIASIS

N. K. Gorbadey, A. M. Gasparyan, L. I. Korytova

Summary

During dynamic examination of 348 patients suffering from nephrolithiasis the authors established the significance of isotopic methods of investigation in determination of the functional condition of the kidneys, depending on the severity and duration of the disease, the presence of concomitant complications and localization of the stone. On the basis of observations the authors recommend employment of isotopic methods in complex examination of urological patients.

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UDC 621.373.421.13:621.372.412

CHERNYKH, G. G., GORBADEY, YA. A.

"Problem of Circuit Oscillations of Quartz Resonators. Part I"

Elektron. tekhnika. Nauchno-tekhn. sb. (Electronic Engineering. Scientific and Technical Collection), 1970, ser 9, vyp. 2, pp 9-22 (from RZh-Radio-tekhnika, No 9, Sep 70, Abstract No 9D277)

Translation: This article contains a description of a method permitting calculation of the frequencies and shapes of the natural oscillations of anisotropic (of monoclinic and higher symmetry) rectangular plates in a wide range of variation and geometric dimensions within the framework of two-dimensional theory. There are six illustrations, one table and a 21-entry bibliography.

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Corrosion

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UDC 669.265'24.018.44:620.196

AZBUKIN, V. G., GORBAKON' A. A., PARSHIN, A. N.

"Increasing the High-Temperature Strength and Resistance to Intercrystalline Corrosion of Kh20N45 Alloys"

V sb Metallovedeniye (Physical Metallurgy -- collection of works), No 15, Leningrad, Sudostroyeniya Press, 1971, pp 92-100 (from Rzh-Metallurgiya, No 4, Apr 72, Abstract 41730)

Translation: The properties of the Kh20N45 alloy mastered by industry are analyzed from the point of view of the suitability of using this alloy in thermal power engineering. It was demonstrated that this alloy, which has high resistance to chloride stress-corrosion cracking, has comparatively low-temperature strength and extremely unstable resistance to corrosion. A study was made of the effect of stabilizing additions of Ti and Nb and of the conditions of austenitizing and additional provocation heating in the $500-850°$ range on the stress-rupture strength. The possibility of increasing the high-temperature strength (stress-rupture strength and deformation capacity) of alloys of this type by additional alloying with molybdenum and their resistance to corrosion by limiting the C content and increasing the Nb content (Nb:C $\geq$ 24) is demonstrated. Three illustrations, four tables, and an 18-entry bibliography.
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USSR   UDC 621.383.5+621.382.28+535.215.12

LITOVCHENKO, V. G., SERBA, A. A., GORBAN', A. P.

"Some Physical Processes in the Metal-Dielectric-Semiconductor System under
Conditions of Strong Nonstationary Depletion of the Semiconductor"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No 5, 1971, pp 11-18

Abstract: A method is proposed for a combined study of the capacitance and
conductivity of a metal-dielectric-semiconductor structure converted to the
nonstationary depletion condition by means of a rectangular-pulse voltage.
The system was studied under two conditions: in the absence of intensification
(the thermodynamically equilibrium situation in a neutral space) and with in-
tensification (thermodynamically known equilibrium situation in neutral space).
     In the thermodynamically equilibrium situation, measurement of the
capacitance and longitudinal conductivity permits determination of the con-
centration of the equilibrium carriers (without distorting the effect of the
mobility, the Hall constant, and so on) and the mobility of the majority car-
riers (including the distribution of the mean mobility with respect to thick-
ness of the specimen). In the thermodynamically nonequilibrium situation,
the investigated system has high collector properties for nonequilibrium
electron-hole pairs; it permits obtaining of a "gigantic" photocapacitive
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LITOVCHENKO, V. G., et al., Poluprovodnikovaya tekhnika i mikroelektronika, No 5, 1971, pp 11-18

effect ($k = C_{eff}/C_{eff\ 0} \sim 10^4-10^5$) and determination of the photogeneration function of the electron-hole pairs in the semiconductor in absolute units. Extraordinarily small light fluxes can be recorded here ($\sim 10^{-12}$ watts/cm^2). Experimental results are presented which confirm the theoretical analysis.

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USSR   UDC 535.215.12+621.382.28

LITOVCHENKO, V. G., SHCHERBA, A. A., GOMEN, ..., MOSKAL', D. N.,
IVANOVA, T. P., TKACHIK, V. P, and PROKUROV, A. V.

"Using Optical-Electronic Converters Using MOS Photovaricaps in
Dosimetric Equipment"

Abstract: An investigation is made of the basic characteristics of
a new type of semiconductor voltage modulator used as the active
element in a surface metal oxide semiconductor photovaricap. This
paper is thus a sequel to two earlier articles (Elektronnaya tekh-
nika, Series 2, 1967, 1, 96, and Radiotekhnika i elektronika, 1967,
12, 1, 76) written by the same authors, which dealt with the the-
oretical analysis of the physical phenomena determining the opera-
tion of MOS varicaps of the optical variety, and the experimental
results of research into their characteristics. The experiments
described in the present paper were conducted with p-type silicon
specimens of various resistivities, from 10^2 to 10^4 ohm·cm, the
surfaces of which were cleaned and sputtered with a layer of SiO_2
A block diagram of the measuring equipment is shown and its opera-
tion described. The authors conclude that these photovaricaps can
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LITOVCHENKO, V. G., et al., Poluprovodnikovaya tekhnika i mikro-
elektronika, No. 5, 1971, pp 108-113

be successfully used in equipment for measuring small constant or
slowly varying currents and voltages from high-resistance sources.
They are associated with the Semiconductor Institute, Ukrainian
Academy of Sciences.

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LITOVCHENKO, V. G., SERBA, A. A., GORBAN', D. H., MOSKAL', D. N., IVANOVA, T. P., TKACHIK, V. P., PROKUROV, A. V.

"Use of an Optoelectronic Converter based on a Metal-Dielectric-Semiconductor Photovaricap in a Dosimetric Device"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No 5, 1971, pp 108-113

Abstract: A study was made of the basic characteristics of a new type of semiconductor voltage modulator using a surface metal-dielectric-semiconductor photovaricap as the active element. The theoretical analysis of the physical phenomena determining the operation of the MDS photovaricaps and also some experimental results of studying their characteristics were presented previously [V. G. Litovchenko, et al., Elektronnaya tekhnika, Series 2, No 1, 96, 1967; V. G. Litovchenko, et al., Radiotekhnika i elektronika, Vol 12, No 1, 76, 1967]. An optoelectronic modulator of constant and low-frequency voltages from high-resistance sources was developed on the basis of an MDS photovaricap and a light diode. The modulator is characterized by high-frequency parameters $(10^5-10^7$ hertz), high input impedance $(> 10^{12}$ ohms), small size and weight. Experimental data were obtained which illustrate the operation of the MDS photovaricap in the optoelectronic modulator, in particular, combined with the

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